What is claimed is:

1. A position information recognition apparatus for a cleaning robot, comprising:

a fixed plate installed at a cleaner main body;

a main motor fixedly installed at the fixed plate in order to generate a rotational force;

a rotational cylinder combined with a rotational axis of the main motor so as to be rotated at a certain angle; and

plural position information sensors installed at the rotational cylinder at a certain angle in order to sense surroundings.

2. The apparatus of claim 1, wherein the fixed plate has a disc shape, and the lower end of the main motor is fastened-combined with the central portion of the fixed plate by a screw.

3. The apparatus of claim 1, wherein the fixed plate includes a sensor hiding means for ascending the position information sensor as a certain height so as to be exposed outside of the cleaner main body in an operation state and descending the position information sensor into the cleaner main body in charging or an operation stop state.

4. The apparatus of claim 1, wherein the main motor is a two-way rotational motor rotating forward or backward at a certain angle.

5. The apparatus of claim 4, wherein the main motor has a rotational angle as ±45°.

6. The apparatus of claim 4, wherein the main motor has a guide plate supporting protrusion projected-formed at three points of the top surface centering around the rotational axis.

7. The apparatus of claim 1, wherein the position information sensor is installed at the outer circumference of the rotational cylinder at an interval of 90°.

8. The apparatus of claim 1, wherein the rotational cylinder includes:

an inner cylinder rotatively mounted on the top portion of the fixed plate, inserted into the outer circumference of the main motor and having an electromotive protrusion at the upper inner circumference of the rotational cylinder so as to be combined with the rotational axis of the main motor; and

an outer cylinder fastened-combined with the upper end of the inner cylinder so as to be rotated together with it and having the position information sensors at the outer circumference of the rotational cylinder at regular intervals.

9. The apparatus of claim 8, wherein the inner cylinder is cylindrical-shaped having the open top and bottom, a flange portion is formed at the lower end outer circumference thereof to rotate the rotational cylinder stably, and a flange portion is formed at the upper end outer circumference thereof to be combined with the outer cylinder strongly.

10. The apparatus of claim 8, wherein the outer cylinder has the open bottom and the closed top as a cap shape and includes an insertion hole formed at the top central portion so as to receive the rotation guide plate.

11. The apparatus of claim 1, wherein the rotational cylinder has a guide plate insertion hole at the top central portion in order to receive a rotation guide plate combined with the main motor as one body.

12. The apparatus of claim 11, wherein an external display means is installed at the top surface of the guide plate in order to display information about an operational state of the cleaner or various circumstances.

13. A main body of a cleaning robot, comprising:

a sensor assembly rotatively installed at the top front surface of the cleaner main body in order to observe surroundings;

a sensor assembly receiving portion concavely formed or pierced so as to hide the sensor assembly; and

a sensor hiding unit formed at a side of the sensor assembly receiving portion in order to move the sensor assembly up and down.

14. The main body of claim 13, wherein the sensor hiding unit includes:

a two-way rotational motor;

a pinion combined with a rotational axis of the two-way rotational motor and being rotated two-way;

a rack combined with the pinion and being linearly moved up and down according to the rotational direction of the pinion; and

a sensor supporting plate formed as one body with the rack and combined with a fixed plate of the sensor assembly.

15. The main body of claim 14, wherein the sensor supporting plate includes at least two guide protrusions at a side surface and includes a long guide groove at the side wall of the sensor assembly receiving portion so as to be corresponded to the guide protrusions.